We developed a decision model comparing IHC/MSI tumor tissue testing (IHC/MSI), followed by targeted sequencing of the suspected gene to two hypothetical universal screening strategies: (1) NGS as a reflex test to IHC/MSI testing if these tests suggest a protein abnormality; (3) use of a NGS gene panel in all patients with CRC. Outcomes measured were life-years gained, quality adjusted life years (QALY) gained, and costs, Sensitivity analyses were conducted to assess uncertainty. **RESULTS:** Compared to the reference strategy, the price per QALY gained was $196,000 for universal NGS gene panel testing. When using NGS gene panel as a reflex strategy to abnormal IHC/MSI, the price per QALY was $71,000. The most influential variables in the one-way sensitivity analysis were the number of relatives tested, the prevalence of Lynch syndrome in CRC patients and the cost of CRC surveillance in relatives with Lynch syndrome detected. **CONCLUSIONS:** Use of NGS in all colorectal cancer patients to detect inherited cancer and inform family members is unlikely to be cost-effective despite the lower per base pair sequencing cost of NGS. However, NGS may be cost-effective when used as a complement to tumor-tissue testing strategies. Further studies are needed to validate these findings.

PCN110
AN OUTCOMES MODEL FOR HIGH-RISK NON-MUSCLE-INVASIVE BLADDER CANCER TREATMENT OPTIONS

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OBJECTIVES: High-risk, non-muscle-invasive bladder cancer (NMIBC) is heterogeneous in its presentation, resulting in patient subpopulations with diverse treatment options. A comprehensive model estimating costs and health outcomes with various NMIBC treatment strategies is needed for diverse patient subpopulations. **METHODS:** A Markov model simulating patient outcomes was developed based on published treatment guidelines. Health states encompass high-risk NMIBC, tumor-free, muscle-invasive progression (MIP), and metastasis. Four patient populations were considered: (1) high-risk T1 or Ta tumors; (2) Carcinoma in situ (Cis) only; (3) high-risk T1/Ta tumors with concomitant Cis; (4) general NMIBC population with high-risk T1/Ta tumors and/or Cis. Treatment options include trans-urethral resection (TUR) and adjuvant intravesical bacillus Calmette-Guérin (BCG), mitomycin C (MMC) or valrubicin for populations (1), (3) and (4), or intravesical treatment alone for population (2). The model assesses treatments as first- or second-line, or as alternatives for patients intolerant of or refractory to other treatment. Radical cystectomy is performed after MIP or repeated treatment failure. Response (in patients with Cis) and recurrence rates and percentages of BCG-intolerant/refractory patients were estimated from the literature. Costs were obtained from publicly available sources. The model was validated against published epidemiology and cost data. **RESULTS:** The lifetime cost per person of treating high-risk T1/Ta patients with BCG was within 20% of costs estimated in published economic models. The lifetime cost per person of treating BCG-intolerant/refractory Cis patients with valrubicin was estimated to be 45% higher than for cystectomy. Adverse event costs for the general high-risk NMIBC population treated with BCG account for 17% of the total treatment cost compared with 5% for MMC. Approximately 40% and 15% of patients treated with BCG eventually undergo cystectomy and MIP, respectively. **CONCLUSIONS:** This validated model can be used to estimate costs and health outcomes associated with existing treatment strategies as well as the cost-effectiveness of novel intravesical therapies.

PCN111
COST-EFFECTIVENESS ANALYSIS OF BEVACIZUMAB IN COMBINATION WITH PC REGIMEN VERSUS PC REGIMEN IN NON-SMALL CELL LUNG CANCER TREATMENT

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OBJECTIVES: Fabulous advance in treatment of NSCLC has been made since the late 1990s, remarkably with the development of targeted drugs such as bevacizumab (BEV). Despite of the proved effectiveness and safety of BEV in treatment of NSCLC, the high price of drug caused obstacles in using drugs in clinical practice. The cost-effectiveness of BEV has been evaluated in many countries. However until now there isn't any relevant study has been evaluated. This is the aim of this study. **METHODS:** A Markov model has been developed to evaluate the cost-effectiveness of bevacizumab in treatment of NSCLC with 3 Markov stages, including stable disease, progressive disease and death. The model has a cycle length of 1 year with the time horizon of life time. The population of 1000 patients patients, entering the model in the SD state, has been evaluated to assess the cost of effectiveness of different treatment regimens. The transition rates have been retrieved from clinical trials. The prices of drugs and medical services have been retrieved from relevant price-lists of major hospitals in Vietnam. The sensitivity analysis has been conducted to evaluate the sensitivity of model. **RESULTS:** The cost of BCP and PC regimen for treatment of NSCLC accounts for 5,979,573,560 VND and 992,767,115 with the QALY of 10.43 and 7.24, respectively. The CER of BCP regimens for treatment of NCSLC accounts for 573,199,170 VND, which is around 4 times higher than that of PC regimen. The ICER of BCP regimen versus PC regimen in treatment of NSCLC accounts for around 1.56 billion VND, which is around 20 times higher than the willingness-to-pay of Vietnam (60 million VND). **CONCLUSIONS:** Due to the high cost of drug, combination of bevacizumab in the PC regimen in treatment of NSCLC is considered not cost-effectiven in Vietnam.

PCN112
ECONOMIC EVALUATION OF FULVESTRANT 500MG FOR THE TREATMENT OF POSTMENOPAUSAL WOMEN WITH ADVANCED BREAST CANCER WHO HAVE PROGRESSED ON ENDOCRINE THERAPY

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BACKGROUND: In Mexico breast cancer reported an incidence of 13,939 cases and 5,217 mortality cases in 2008. Between 40-50% of those cases are diagnosed in stages III and IV. **OBJECTIVES:** The aim of this study was to assess a cost-effectiveness analysis for the use of fulvestrant 500mg as a therapy for postmenopausal women with locally advanced or metastatic breast cancer with ER+ receptor and prior progression on endocrine therapy, from Public Health Sector perspective in Mexico. **METHODS:** A cost-effectiveness analysis was performed using a Markov model with a time horizon of 1 and 5 years according to a prior economic evaluation and based on the results from CONFIRM study. Two cohorts of treatment were compared; Cohort A contemplates the addition of fulvestrant to the standard treatment and Cohort B the standard treatment. The effectiveness was measured as Life years Gained (LY). The use of resources was determined from the clinical practice in Mexico and costs were obtained from institutional sources. **RESULTS:** The ICER per LY for 1 year time horizon was $9,609 for Cohort A versus Cohort B. The fifth year implies an ICER of $6,581, being in both cases an ICER below the willingness to pay in Mexico (1 GDP: $10,000USD). **CONCLUSIONS:** Based on the findings the use of fulvestrant is a cost-effective strategy that provides a longer period of stable disease, an improvement in LY, diminish the use of chemotherapy and optimize institutional resources.

PCN113
ASSESSMENT COST-EFFECTIVENESS OF PEGFILGRASTIM AND FILGRASTIM IN PEDIATRIC PATIENTS WITH SOLID TUMORS

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OBJECTIVES: Evaluate the cost- effectiveness of pegfilgrastim compared with filgrastim relationship in preventing febrile neutropenia in pediatric patients with solid tumors. **METHODS:** Retrospective cohort study from 2012 to 2014, and was made micro-cost technic. Records of pediatric patients diagnosed with solid tumors receiving pegfilgrastim and filgrastim post-chemotherapy for prevention of febrile neutropenia were evaluated. Febrile neutropenia is considered as an event with absolute neutrophil count less than 1000 cells per milliliter blood and fever $\leq$ 38.2°C. This study adheres to the principles of the Declaration of Helsinki, followed good clinical practices and has been approved by Hospital bioethics committee. **RESULTS:** 120 and 152 cases of pegfilgrastim and filgrastim respectively were included. The mean age was 9 years, 63 % male and 47 % female. The absolute neutrophil count was 6,204 with pegfilgrastim and filgrastim 2,332. Filgrastim was more effective cost $ 1195 pesos per thousand neutrophils, in cases where lower doses were administered to 200 micrograms per maximum 7 days. The cost-effectiveness of pegfilgrastim was $ 2,484 per thousand neutrophils, reaching a cost effective advantage in cases of patients over 40 kilos would require 7 to 14 doses of filgrastim. No significant differences in the effectiveness of pegfilgrastim and filgrastim in post-chemotherapy preventing neutropenia were observed. **CONCLUSIONS:** Filgrastim maintains effective cost advantage over pegfilgrastim when the dose is less than 200 micrograms in a treatment period of at least 7 days

PCN114
A RANDOMIZED CLINICAL STUDY TO EVALUATE EFFECTS OF EICOSAPENTAENOIC ACID ENRICHED ORAL NUTRITIONAL SUPPLEMENT ALONG WITH RADIO-CHEMOTHERAPY IN PATIENTS WITH COLORECTAL CARCINOMA: A COST-EFFECTIVENESS ANALYSIS

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OBJECTIVES: A randomized clinical study compare effects of pre-operative eicosapentaenoic acid enriched oral nutritional supplement (EPA-ONS) along with 5-weeks radio-chemotherapy to 5-weeks radio-chemotherapy only on survival and quality of life and safety had been completed and the results were published elsewhere. This abstract aimed evaluate cost effectiveness of 5-week EPA ONS usage compared to no nutritional supplement in terms of survival. **METHODS:** A total 80 colorectal carcinoma patients had been randomized to 5-week radio-chemotherapy (FUFA+EBRT)+EPA ONS (2 package per day) or radio-chemotherapy (FUFA+EBRT) only equally by stratifying age, gender, nutritional status and radiotherapy method. In study time horizon, survival was evaluated by Kaplan Maier estimator and exponential parametric regression model (best fitting model based on AIC-BIC) was used to extrapolate 10-year survival. Since patients' characteristics, treatment modalities and other procedures were reported to be similar among groups, only cost of EPA ONS was taken into cost-analysis which is prepared from perspective of reimbursement institute in Turkey. **RESULTS:** Mean (95% confidence interval) survival time was 6.8(6.3-7.3) and 5.5(4.6-6.4) years in EPA-ONS + radio-chemotherapy and radio-chemotherapy only groups, respectively. Five week EPA-ONS costs 224.6 USD/per patient. Incremental cost effectiveness ratio (ICER) for in study period was 234.4 USD per life-year gained; when 10-year survival model was used ICER was 97.5 USD per life-year gained. **CONCLUSIONS:** Survival analysis revealed that preoperative EPA-ONS usage along with radio-chemotherapy prolonged overall survival. EPA-ONS appears to be a cost-effective concomitant treatment of radio-chemotherapy in patient with colorectal carcinoma.

PCN115
PROJECTING THE POTENTIAL PUBLIC HEALTH IMPACT OF A 9-VALENT HPV VACCINE IN JAPAN

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OBJECTIVES: To estimate the potential public health impact of a 9-valent HPV (human papillomavirus) vaccine (HPV9) in Japan in preventing HPV-related dis-

eases including cervical intraepithelial neoplasia grades 1 (CIN 1), grades 2 and 3 (CIN 2/3), and cervical cancer. **METHODS:** A mathematical model of the transmission dynamics of HPV infection and disease for the HPV9 vaccine was calibrated to Japanese epidemiological data on cervical cancer. Based on global estimates, we attributed 70% of cervical cancer to HPV 16 and 18 for the quadrivalent vaccine (types 6/11/16/18: HPV4), and 20% to the five additional types in HPV9 (31, 33, 45, 52, and 58). Other inputs were from public data sources and published literature. Vaccine efficacy against the 5 additional HPV types was taken from phase III trial results for the HPV9 vaccine. We assessed the incremental public health impact of HPV9 over HPV4 based on vaccinating 80% of females by age 12. **RESULTS:** We projected that HPV9 vaccination of females could reduce the incidence of cervical cancer by 46% over 100 years, relative to 36% for HPV4. HPV9 vaccination relative to HPV4 vaccination could prevent an additional 305,000 cases of CIN1, 636,000 cases of CIN2/3, and 78,000 cases of cervical cancer in the Japanese population, cumulative over 100 years. **CONCLUSIONS:** Protecting the Japanese population against HPV infection with an HPV9 vaccination program relative to an HPV4 vaccination program can have significant public health benefits in addition to the benefits provided by HPV4 vaccination.

PCN116

COMPARING FIVE ALTERNATIVE METHODS OF BREAST RECONSTRUCTION SURGERY: A COST-EFFECTIVENESS ANALYSIS

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OBJECTIVES: To assess cost-effectiveness of five standardized procedures for breast reconstruction to delineate the best reconstructive approach in the post mastectomy patients in the settings of non-radiated and radiated chest walls. **METHODS:** A decision tree modeled five breast reconstruction procedures from the provider perspective to evaluate cost-effectiveness. Procedures included autologous flaps with pedicled tissue, autologous flaps with free tissue, latissimus dorsi flap with breast implant, expander with implant exchange, and immediate implant placement. All methods were compared to a do-nothing alternative. Data for model parameters was collected through a systematic review, and patient health utilities were calculated from an ad-hoc survey of reconstructive surgeons. Results were measured in cost (US $2011) per quality-adjusted life year (QALY). Univariate sensitivity analyses and Bayesian multivariate probalistic sensitivity analysis were conducted. **RESULTS:** Pedicled and free autologous tissue reconstruction were cost-effective compared to the do-nothing alternative. Pedicled autologous tissue was the slightly more cost-effective of the two. The other procedures were not found to be cost-effective. The results were robust to a number of sensitivity analyses, although the margin between pedicled and free autologous tissue reconstruction is small and affected by some parameter values. **CONCLUSIONS:** Autologous pedicled tissue was slightly more cost-effective than free tissue reconstruction in radiated and non-radiated patients. Implant-based techniques were not cost-effective. This is in agreement with the growing trend at academic institutions to encourage autologous tissue reconstruction due to its natural recreation of the breast contour, suppleness, and resiliency in the setting of radiated recipient beds.

PCN117

A HEALTH TECHNOLOGY ASSESSMENT OF A PROPOSED BIOSIMILAR FOR THE TREATMENT OF CHEMOTHERAPY INDUCED FEBRILE NEUTROPENIA: A UNITED STATES PAYER PERSPECTIVE

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OBJECTIVES: To the best of our knowledge, till date, US do not market any biosimilar for the treatment of chemotherapy induced febrile neutropenia (CIN). With Europe and Asia already marketing their biosimilars, it was timely to estimate the value of this proposed biosimilar in the US. The primary goal of this comparative technology assessment was to estimate the economic value by quantifying the savings offered by the biosimilar compared to its reference biological, filgrastim. The secondary goal was to highlight the clinical value of a proposed biosimilar with the help of a cost-effectiveness analysis from a US payer perspective. The biosimilar is compared to filgrastim and pegfilgrastim, intended for the treatment of CIN. **METHODS:** A decision analytical model was designed and implemented using TreeAge Pro 2013 software. The initial cost and clinical estimates were based on a similar model published by Eldar-Lissai et al (2008) with modified and updated clinical estimates along with costs adjusted to 2013. The model was modified to include a proposed biosimilar expected to be released in the U.S. in 2014. Sensitivity analyses, including Monte Carlo probabilistic analyses, were conducted to assess the robustness of the model. **RESULTS:** The model estimated expected costs for the three therapies to be: $3,092.41, $3,808.81, and $5,238.82 for biosimilar filgrastim, originator filgrastim, and pegfilgrastim respectively. The estimated savings of the biosimilar is estimated to be $ 716.40 per chemotherapy cycle and as per estimated usage, this translates to a total potential savings of $1.2 billion by the end of 2014. The cost-effectiveness analysis resulted in an ICER of $ -3,766.29/day length of stay between biosimilar filgrastim and pegfilgrastim demonstrating clinical value. **CONCLUSIONS:** With the new US biosimilar legislation of February 2012 and filgrastim losing its patent protection in December 2013, this pharmacoeconomic analysis is timely and significant for health policy.

PCN118

COST–EFFECTIVENESS ANALYSIS PARALLEL TO A RANDOMIZED CONTROLLED TRIAL COMPARING VERTICAL SCAR REDUCTION (VSR) AND INVERTED T-SHAPED REDUCTION (ITR) MAMMOPLASTY

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OBJECTIVES: The two most common breast reduction techniques presently used in North America are the Vertical Scar Reduction (VSR) and the Inverted T-shaped Reduction (ITR). A previous Randomized Controlled Trial (RCT) has shown no clear superiority of one over the other in terms of Health-Related Quality of Life (HRQL). No economic evaluation has been undertaken however to determine if the VSR is more cost-effective than the ITR. **METHODS:** 255 patients were randomized to either VSR or ITR immediately pre-operatively. The effectiveness of two techniques was measured with the HUI3. Both direct and productivity costs were captured parallel to the RCT. Case Report Forms (CRF) captured patient-related costs associated with the surgery. The human capital method was used to capture productivity losses. The perspectives of the Ministry of Health (MOH), the patient and the Society were considered **RESULTS:** ITR dominated VSR under the MOH perspective by being slightly less costly ($3,090.06 vs. $3,106.58) and slightly more effective i.e. 0.87 Quality Adjusted Life Years (QALY) versus 0.86 QALYs. In the societal and patient perspective, VSR was both less costly and less effective. At the commonly quoted Canadian threshold of $50,000 per QALY gained, the probability that VSR was cost-effective was 29.3%, 68.2% and 66.9% under a MOH, patient and societal perspective respectively. A subgroup analysis of breast reductions of <500 grams found that the VSR was more likely cost-effective. **CONCLUSIONS:** This analysis informs us that the VSR is more likely than not, cost-effective from the patient and societal perspective but not from the MOH at a willingness-to-pay threshold of $50,000/QALY. If, however, we were to limit the VSR for those breast reductions in which we expect excision of breast tissue <500 grams per breast, then this technique is more likely cost-effective under all perspectives.

PCN119

COST-UTILITY ANALYSIS OF DABRAFENIB/TRAMETINIB COMBINATION (D+T) FOR BRAFV600 MUTATION-POSITIVE METASTATIC MELANOMA (MM) FROM THE UNITED KINGDOM (UK) NATIONAL HEALTH SERVICE (NHS) PERSPECTIVE

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OBJECTIVES: Estimate the incremental cost-effectiveness ratio (ICER) of D+T versus vemurafenib and dacarbazine for BRAFV600 mutation-positive MM from the UK NHS perspective. **METHODS:** A partitioned-survival model with 3 states (progression-free survival [PFS], post-progression survival, and death) and a lifetime horizon was developed. Treatment benefits were measured as gains in quality-adjusted life-years (QALYs). PFS and overall survival (OS) were derived from indirect treatment comparisons (ITCs) of D+T (from the Phase II BRF113220 study) versus vemurafenib (BRIM-3) and dacarbazine (BREAK-3). Latest OS data were adjusted for confounding effects of treatment switching, permitted upon progression in all studies. Safety data were from aforementioned trials. Costs were from the literature, a physician survey, and assumptions. Costs of medications to the NHS (incorporating available patient-access schemes), post-study anticancer therapy, routine and adverse event (AE) management, treatment initiation, and death were included. Utility data for D+T were derived from BREAK-3, with adjustment for differences in response and incidence of AEs. Deterministic and probabilistic sensitivity analyses were performed. **RESULTS:** ITCs showed D+T significantly improved PFS versus vemurafenib (hazard ratio [HR] 0.38; 95% CI, 0.19–0.74) and dacarbazine (0.14; 0.08–0.28) and suggested improved OS, although not statistically significant (0.42; 0.09–1.97 versus vemurafenib and 0.26; 0.05–1.27 versus dacarbazine). Treatment with D+T was associated with a gain in QALYs versus vemurafenib and dacarbazine. The ICER for D+T was £50,603/QALY versus vemurafenib and £49,804/QALY versus dacarbazine. **CONCLUSIONS:** Based on results of a Phase II trial and an ITC, D+T offers improved PFS and OS versus vemurafenib and dacarbazine. Further, considering NICE's criteria for life-extending, end-of-life treatments, D+T may be cost-effective compared with vemurafenib, the NHS's current standard of care for patients with BRAFV600 mutation-positive MM, although conclusions must await ongoing modelling on the basis of the Phase III, COMBI-D trial.

PCN120

COST-UTILITY ANALYSIS OF CYSTECTOMY VERSUS CHEMO-RADIATION FOR TREATMENT OF MUSCLE-INVASIVE BLADDER CANCER IN THE ELDERLY

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OBJECTIVES: Muscle-invasive bladder cancer (MIBC) is a deadly disease that disproportionately affects the elderly and is treated with bladder removal (i.e. radical cystectomy). A novel therapy utilizing chemo-radiation has demonstrated fewer adverse effects with comparable survival rates, with the possibility of requiring delayed cystectomy. The objective of this study was to examine the cost-utility of radical cystectomy compared to chemo-radiation in the treatment of (MIBC) among the elderly. **METHODS:** A decision-analytic model from the Medicare payer perspective followed hypothetical patients ages 65 and older with MIBC, using a 5-year time horizon from the start of treatment. Surgery and chemo-radiation toxicity, survival, and quality-of-life weights were derived from the clinical literature, and costs were derived from 2013 Medicare fee schedules. Sensitivity analyses were performed to address the uncertainty of parameter values. **RESULTS:** In the base-case analysis, chemo-radiation was less costly and less effective than radical cystectomy. Chemo-radiation resulted in a cost savings of $6,788 per patient whereas cystectomy resulted in additional 1.2 quality-adjusted life-years (QALY) per patient. Thus, cystectomy would be preferred with an incremental cost-effectiveness ratio of $5,680 per QALY. Therefore, at a threshold of $50,000 per QALY, chemo-radiation is not cost-effective when compared to radical cystectomy. Overall conclusions remained the same in sensitivity analyses, although the model was most dependent on the